



Multilayer aerosol climatology derived from regular lidar measurements in the framework of EARLINET (2001-2004), at Thessaloniki, Greece

A. Amiridis, D. Balis, E. Giannakaki, C. Zerefos

Laboratory of Atmospheric Physics, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece (vamoir@auth.gr / Fax: +30 2310998090)

A UV Raman lidar system performed routine measurements of suspended aerosol particles in the planetary boundary layer and the free troposphere over Thessaloniki (40.5⁰N, 22.9⁰E), in the frame of the EU funded EARLINET project from January 2001 to December 2004. A statistical analysis concerning the vertical distribution of the extinction and backscatter coefficients is presented here. A set of 90 aerosol extinction and 211 aerosol backscatter profiles at 355 and 532nm has been used for statistical investigations. Annual cycles and cumulative frequency distributions are also presented. An analysis of the data using back trajectories showed that a part of the total variability of the optical properties of aerosol in the free troposphere could be explained by the air mass origin. The calculated trajectory clusters provide an indication of source regions and transport pathways influencing Thessaloniki at different times of year.